

## STAFF SUMMARY FOR JUNE 14-15, 2023

**22. EXPERIMENTAL FISHING PERMIT (EFP) APPLICATION 2023-01****Today's Item****Information** ☐**Action** ☒

Receive, consider, and potentially act on EFP Application 2023-01 for Sustainable Seas Technology pop-up systems testing in the experimental fishery for brown box and king crab.

**Summary of Previous/Future Actions**

- Department transmitted accepted EFP application to Commission February 3, 2023
- Published notice of receipt of EFP application February 10, 2023
- Published notice of receipt of Department recommendation May 15, 2023
- **Today discuss and consider approving EFP application 2023-01 June 14-15, 2023**

**Background**

The Commission and Department jointly administer the EFP program, authorized by the California Fisheries Innovation Act of 2018 (California Fish and Game Code Section 1022) and established through regulations adopted by the Commission (Section 91, Title 14). The EFP program fosters innovation and experimentation in California's commercial and recreational marine fisheries to inform the conservation and sustainable use of the state's marine resources. The program provides opportunities for fishers and scientific partners to obtain limited, short-term exemptions from state fishing laws and regulations to test and deploy new management approaches or pursue fishery-related research. For additional information see the Department's EFP program webpage at <https://wildlife.ca.gov/Conservation/Marine/EFP>.

***EFP Application Overview***

On January 3, 2023, the Department received an EFP application from Kim Sawicki of Sustainable Seas Technology to conduct exploratory fishing activities that build upon the existing experimental box crab research program. The project is proposed to test a variety of releases and line management methods and identify the best configurations for the box crab fishery; utilize, test and report on the ability of Subsea Buoy Retrieval Systems adjuncts and methods for retrieval of potential lost gear; and evaluate the use of electronic monitoring and gear marking to avoid overlaying of other fishing gear and provide an adequate interface for Department Law Enforcement Division staff to perform routine activities.

The applicant requests a Tier 4 EFP to: (1) collect biological and fishery data to help fill critical information gaps for brown box crab and California king crab; and (2) test the effects and efficacy of using pop-up gear fishing systems (also known as "ropeless," "lineless," and "on-demand" fishing systems) in this experimental fishery.

*Location:* Between Point Conception (34° 27' N. latitude) and the California/Mexico border (32° 32' N. latitude) only.

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*Authorized agents and vessels:* Two, with a provision to add up to a maximum of ten authorized agents and five vessels.

*Gear:* Various smart buoy release systems and line management methods, smart buoy release system adjuncts and methods for retrieval if lost, and various electronic monitoring/gear marking options (See Exhibit 1, pages 11 and 12 for details).

*Authorized take:* Up to 36,000 pounds of brown box crab and up to 36,000 pounds of California king crab annually per authorized vessel.

Testing of the pop-up fishing systems follows a three-phase approach.

- Phase 1: Dockside/inshore configuration trials and testing; Sustainable Seas Technology would provide participants with instruction and hands-on training. Authorized agents must first demonstrate core competency with all equipment, devices, and data collection protocols before moving to Phase 2.
- Phase 2: Finalize individual gear configurations at sea using an attached backup line and a surface marker buoy while the gear is actively tended.
- Phase 3: Exploratory fishing with pop-up gear systems can begin upon notification of the Department.

### ***Application Review***

Following completion of all required procedural steps (see <https://fgc.ca.gov/EFP#SST> for documentation), the Department conducted a technical review of the application. Based on discussions with the Department, the applicant submitted an amended EFP application (Exhibit 1). The Department concluded its technical review of the amended application and transmitted its recommendation to the Commission on April 28, 2023, including proposed special conditions on form DFW 1103 (see exhibits 2 and 3 for details). The Department recommends that the Commission approve a Tier 4 EFP for purposes of conservation engineering, data collection, and exploratory fishing with the proposed special conditions as reflected in the revised application. If approved, the Department-proposed special conditions, together with the standard terms, will ensure marine resources are protected and allow the Department to adequately enforce the EFP.

### ***Fee Reduction Allowance***

EFP regulations (subsection 91(m)(3)) allow an applicant to receive a 50 percent reduction in the initial permit issuance fee and annual permit at the time of Commission approval, if the Department deems the EFP necessary to address a specific fishery management need or priority. The Department recommends approval of a permit fee reduction as the proposed EFP would provide information on innovative fishing gear and techniques to reduce interactions with protected species; test methods for identifying fixed-gear fisheries in the event of an entanglement; and allow the collection of important biological and fishery data to help fill critical information gaps for brown box crab and California king crab.

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**Today's Meeting**

Today the Department will present an overview of the EFP application and the Department's recommendations, including special conditions, for Commission consideration and potential approval (Exhibit 4).

**Significant Public Comments**

Three environmental non-governmental organizations jointly express support for approving EFP Application 2023-01, to build on the previous successful trial of Subsea Buoy Retrieval Systems (Exhibit 5). The proposed project also complements ongoing alternative gear testing efforts in the California Dungeness crab fishery.

**Recommendation**

**Commission staff:** Approve the EFP application with special conditions and permit fee reduction, as recommended by the Department.

**Department:** Approve the EFP application with special conditions, as specified on form DFW 1103 in Exhibit 3, and approve a permit fee reduction.

**Exhibits**

1. [EFP Application 2023-01, as revised April 7, 2023](#)
2. [Department memo transmitting recommendation, standard terms, and proposed special conditions, received April 28, 2023](#)
3. [Draft Form DFW 1103, including standard terms and proposed special conditions for EFP 2023-01](#)
4. [Department presentation](#)
5. [Joint letter from the Natural Resources Defense Council, Endangered Habitats League, and Ocean Defenders Alliance, received May 31, 2023](#)

**Motion**

Moved by \_\_\_\_\_ and seconded by \_\_\_\_\_ that the Commission **approves** EFP Application 2023-01 to conduct exploratory fishing for brown box crab and California king crab in California waters, with special conditions as recommended by the Department in Exhibit 3 and a 50 percent permit fee reduction.

**OR**

Moved by \_\_\_\_\_ and seconded by \_\_\_\_\_ that the Commission **does not approve** EFP Application 2023-01 to conduct exploratory fishing for brown box crab and California king crab in California waters.

**PROJECT TITLE:****Subsea Buoy Retrieval Systems Testing in the Box and King Crab Experimental Fishery****A. CONTACT INFORMATION**

Provide contact information for key participants, including the applicant and, if applicable, the entity administrator and any authorized agent(s). If any key participant does not have a Get Outdoors ID (GO ID) or commercial fishing license (CFL) number, they must provide information for CDFW to create a new customer profile pursuant to subsection 91(c)(2)(A)(1), Title 14, CCR.

**1. Applicant**

<b>Name</b>	Kim Sawicki
<b>Title and Affiliation</b>	President, Sustainable Seas Technology, INC
<b>Mailing Address</b>	[Mailing address omitted]
<b>Email Address</b>	[Email address omitted]
<b>Telephone Number</b>	[Phone number omitted]
<b>GOID or CFL Number</b>	[GOID/CFL number omitted]

**2. Entity Administrator**

<b>Name</b>	
<b>Title and Affiliation</b>	
<b>Mailing Address</b>	
<b>Email Address</b>	
<b>Telephone Number</b>	
<b>GOID or CFL Number</b>	

**3. Authorized Agents**

<b>Name</b>	Gregory Olsen
<b>Title and Affiliation</b>	Captain F/V Fourth Watch
<b>Mailing Address</b>	[Mailing address omitted]
<b>Email Address</b>	[Email address omitted]
<b>Telephone Number</b>	[Phone number omitted]
<b>GOID or CFL Number</b>	[GOID/CFL number omitted]
<b>Name</b>	Dannial Major
<b>Title and Affiliation</b>	Captain F/V Island Lady G

Mailing Address	[Mailing address omitted]
Email Address	[Email address omitted]
Telephone Number	[Phone number omitted]
GOID or CFL Number	[GOID/CFL number omitted]

The applicant requests that up to ten Authorized Agents be permitted to participate in this EFP, if approved. Enrollment into the program would focus on fishers with extensive experience in trap/pot fishing and/or those in good standing with the Department. It is understood that the Department would conduct background checks on candidates and that recruitment would incur additional amendment fees at the time of an amendment request.

## B. STATEMENT OF PURPOSE

### 1. Describe the purpose and goals of the proposed project, including how the project meets or is consistent with the policies of Fish and Game Code (FGC) Section 7050.

The purpose of this project is to build upon an existing Experimental Fishing Permit (EFP) program to fill critical data gaps in essential fishery information for brown box crab and California king crab and evaluate the potential for a commercial fishery for brown box crab and its design elements. An exploratory fishing program for box crab was originally approved by the California Fish and Game Commission in December 2018 and is currently set to expire on April 1, 2023. This was a collaborative research program involving the California Department of Fish and Wildlife (CDFW), California Sea Grant, and commercial fishers, among other partners and sponsors. Research included exploratory fishing, a tag-recapture study, and laboratory studies of life history. Based upon the information gained from the current EFP, brown box crab and California king crab seem to represent a viable new fishing opportunity in southern California: markets are growing, there is interest from the fishing community in increasing participation, and information gained through this research can be used to establish a small fishery with conservative management measures. However, sufficient information is not yet available to enable the California Department of Fish and Wildlife (CDFW) to make a final recommendation on whether a sustainable commercial fishery could be established, nor what management measures are needed and the supporting regulations to implement them. We propose an EFP for a small-scale box crab and king crab fishery to continue gathering critical information that will allow CDFW to complete its assessment of management strategies for this emerging fishery. This purpose is aligned with the guidance of the Marine Resources Committee of the California Fish and Game Commission given during the March 24, 2022 meeting to pursue the development of a new experimental fishing permit program for brown box crab.

Importantly, this project would also allow for testing the feasibility of using subsea buoy retrieval systems<sup>1</sup> in deep water. The results of the testing will ultimately serve to enable decision-making

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<sup>1</sup> Subsea Buoy Retrieval Systems are also known as “ropeless”, “lineless”, “pop-up”, and “on- demand” fishing systems. For the purpose of the application, the all-inclusive term SBRS will be used for all devices, regardless of release type. (Galvanic, Timed, Acoustic).

regarding the authorization of alternative gear for use in California's box and king crab fisheries. Similar EFPs have been proposed in northern California for testing with the Dungeness crab fishery, but this project will expand our understanding of the utility of these alternative gear types across a range of habitats, depths, sea conditions, and fishing practices.

Consistent with Fish and Game Code (FGC) Section 7050, this project aims to ensure the conservation of ESA-listed marine species and allow for limited testing of a box and king crab fishery through effective collaborations and a science-based approach. Efforts included within this EFP promote scientific research to better inform fishery management decisions that recognize the importance of commercial fisheries while conserving the health and diversity of marine ecosystems.

The goals of this EFP include specific aspects related to Fishery/Biological Research as well as Alternative Gear Testing:

Fishery/Biological Research:

- Gather essential fishery information for brown box crab and California king crab to fill critical knowledge gaps related to habitat, abundance, growth, movement, and bycatch in southern California;
- Implement a limited test fishery for brown box crab and California king crab using information generated during the previous, exploratory fishing EFP that includes testing wildlife entanglement risk mitigation measures;
- Work with CDFW to support its continued evaluation of the feasibility of a commercial fishery for brown box crab and California king crab and its design elements.

Alternative Gear Testing:

Primary goals:

- Provide necessary information to establish the efficacy of use of subsea buoy retrieval system devices with respect to entanglement risk reduction, fisher safety, cost, and fishing performance in the context of the box crab fishery.
- Work with CDFW Law Enforcement Division (LED) staff to develop and refine alternative gear enforcement protocols including the subsea buoy retrieval systems, the rmwHub interoperable virtual gear marking system and enforcement dashboard configurations and refine the gear and methods accordingly.
- Work with future CDFW-approved participants to certify competency in available subsea buoy retrieval system technologies.

Secondary Goals

- Provide experience with the use of subsea buoy retrieval system gear to build confidence within the box and king crab fisheries for potential use in future whale entanglement mitigation strategies.
- Expand outreach opportunities with other fisheries to further the consideration of subsea buoy retrieval system gear and other whale entanglement mitigation strategies.

**2. Provide a list of proposed project activities that are prohibited under current state fishing laws or regulations (cite the specific section number(s), if known), and the reasons to justify authorization (exemption) of those activities under the EFP.**

- a) Applicant is requesting authorization to target Brown box crab and California king crab and land these species in excess of the 25 lb. limit per day (CCR Title 14 § 126 (b)(1)).
- b) Every trawl of traps will be marked with a buoy per FGC Section 9005, but applicant is requesting that subsea buoy retrieval system devices be allowed on all trawls (see section E.1), which would mean that the buoy would be submerged and therefore not visible at the surface until it is released.
- c) Applicant is also requesting that rock crab, spot prawn, groundfish, and lobster fishing also be allowed during experimental fishing trips in which subsea buoy retrieval system devices are used on box crab and king crab traps. This would require an exemption to the CCR Title 14 § 125 (b)(3) prohibiting the possession of these devices by any commercial rock crab trap permittee on any vessel while taking or attempting to take rock crab during mixed-fishery trips.

### **C. STATEMENT OF QUALIFICATIONS**

**1. Lead and provide supervisory oversight for all activities of the permit under the authorizations, standard terms, and special conditions.**

Kim Sawicki (Sustainable Seas Technology) will lead the project and provide oversight of training and field-testing aspects related to subsea buoy retrieval system gear. Ms. Sawicki is a research associate and PhD student at the University of Massachusetts-Dartmouth School for Marine Science and Technology and the President of Sustainable Seas Technology, Inc. She has dual degrees in Pathobiology & Veterinary Science and Allied Health Sciences and is Fulbright-Schuman Alumnae for her independent research project in Scotland, the UK, and Ireland in this topic. In these capacities, she has conducted extensive field research on alternative fishing gear methods around the world for over five years and is currently overseeing research for a similar experimental fishing permit project in the South Atlantic black sea bass pot fishery. Her work with Sustainable Seas Technology focuses on empowering individuals, fishing communities, and conservationists to engage in productive and non-judgmental dialogue to help reduce fishing gear loss and cetacean mortalities through unintended sea surface interactions. She is a recognized global expert in these technologies and has volunteered extensively on the West Coast as an invited speaker for the Dungeness crab fishery, and as an outreach consultant for the National Marine Sanctuaries Foundation. She has also fished under an individual commercial license with the Dungeness crab fishery as paid crew, as well as for research purposes pertaining to this project and others.

All authorized agents recruited by the applicant will be experienced commercial fishers who are in good standing with CDFW (for additional information, see Section C2 below) and who are capable of following protocols to test alternative gear configurations. All applicants will be required to complete an initial 40-hour training certification with the various subsea buoy retrieval system gear types listed in section E.6.

CDFW Marine Region staff will provide all forms, logbooks, and instructions for the collection and submission of all biological and fishery-related data required by CDFW. SST will work with CDFW to coordinate the collection of biological samples and facilitate at-sea or dockside sampling by staff or professional observers as requested by CDFW. These data will be analyzed by CDFW. SST will be responsible for preparing and submitting the annual and final reports to CDFW.

**2. Experience in identification, methods, and protocols specific to the requested species listed under section E.2. of this document**

The applicant will seek to recruit fishers who have in-depth knowledge of how to fish for the species of interest and have demonstrated themselves to be collaborative participants in this or other experimental fisheries. In addition to experience specifically related to fishing for box and king crab, the applicant and future Authorized Agents will perform competency training to assure that all the participating experienced trap fishers are also capable of following protocols to test alternative gear configurations. The applicant trains fishers in an initial 40-hour training certification with the various subsea buoy retrieval system gear types listed in section E.6.

**3. Obtain all appropriate authorizations and oversee quality control measures to assure conformance to the specified standards or requirements (e.g., take appropriate measures to ensure, promote, and facilitate compliance).**

The applicant will hold her own permit and will therefore be responsible for obtaining all appropriate authorizations and meeting all requirements of the permit. The primary applicant and additionally recruited individuals may request a secondary operator, listed in an amendment request, as authorized agents, who would be allowed to fish under the permit without the primary permit-holder on board. Secondary operators would also be required to meet all requirements of the permit, including following all applicable protocols for communication, data collection, and fishing practices. The primary permit-holder will ultimately be responsible for ensuring the secondary operators' compliance and ensuring biological and fishery-related data collection protocols are being followed accurately and submitted to CDFW Marine Region in a timely manner. The primary permit holder will also be responsible for day-to-day oversight of quality control measures related to subsea buoy retrieval system gear testing.

**4. Train all persons operating under the permit.**

All future authorized agents will be trained in data collection and alternative gear operation protocols. The permit holder will be responsible for ensuring that anyone conducting or assisting with fishing operations is able to perform these responsibilities as needed.

CDFW Marine Region staff will provide initial training on biological and fishery data collection protocols to the primary permit holder. Additional participants recruited into the program will also receive training from CDFW staff as well as any secondary operators.

The applicant will be responsible for the initial training of all future Authorized Agents operating subsea buoy retrieval system gear under the permit. Subsequently, once fishers have demonstrated proficiency with the gear, they will also be certified through SST to assist in training additional participants.

## **5. Coordinate field activities and communicate field findings with CDFW marine region.**

Kim Sawicki of Sustainable Seas Technology, INC will be responsible for coordinating field activities and communicating field findings to CDFW Marine Region. She has worked with CDFW over the past two years in the development and testing of the gears and the needs of CDFW. The permit-holder will submit annual and final reports as required by the EFP program. Each future authorized agent will be responsible for coordinating their own fishing operations. In addition to providing information about the fishery and alternative gear types by following data collection and gear-testing protocols, authorized agents will share any observations made during this EFP via informal conversations with Department staff, and in meetings or workshops.

## **6. Collect, analyze, and transmit biological data gathered under the EFP to CDFW marine region.**

Kim Sawicki of Sustainable Seas Technology, INC (SST) will be responsible for the collection, analysis, and transmission of data gathered by the participants under the EFP to CDFW Marine Region. Sawicki has extensive experience with the collection, analysis and communication of data related to subsea buoy retrieval system fishing gear including testing programs in the Dungeness Crab, Spiny Lobster, American Lobster, European Lobster, black sea bass, and Brown and Velvet Crab fisheries (UK). Sawicki will assimilate information regarding subsea buoy retrieval system gear, transmit data summaries, and share her findings with CDFW. CDFW Marine Region and LED staff will also have access to data collected via gear marking and electronic monitoring systems to enable required enforcement activities. Applicant and any Authorized Agents will submit all required data related to fishing and biology, such as electronic monitoring records, logbooks, and other data collection forms, to CDFW Marine Region in a timely manner after each fishing trip.

### **D. PERMIT APPLICATION TYPE**

#### **1. Select desired permit tier.**

- ☐ Tier 1 (For purposes other than exploratory fishing)
- ☐ Tier 2 (For purposes other than exploratory fishing with assistance from CDFW)
- ☐ Tier 3 (For the purpose of exploratory fishing)
- ☒ Tier 4 (For the purpose of exploratory fishing with assistance from CDFW)

#### **2. Request permit fee reduction option consideration.**

- ☒ Yes ☐ No

A permit fee reduction is requested due to the Department's strong interest in the development and testing of alternative gear types designed to reduce the risk of wildlife entanglement in fixed-gear fisheries. In addition, the applicants are willing to mark surface buoys and lines as needed by the Department to help inform a future line-marking program in California.

**3. Has pre-application consultation with CDFW taken place with respect to this proposal?  
(Required for a Tier 2 EFP, Tier 4 EFP, or permit fee reduction option)**

☒ Yes

☐ No

If yes, attach a copy of the pre-application consultation summary letter or provide the name and contact information of CDFW staff with whom the applicant consulted:

Consultation between the applicants, Kim Sawicki, and CDFW Marine Region staff, including Lindsay Orsini ([lindsay.orsini@wildlife.ca.gov](mailto:lindsay.orsini@wildlife.ca.gov)), Steven Rienecke ([steven.rienecke@wildlife.ca.gov](mailto:steven.rienecke@wildlife.ca.gov)), and Tom Mason ([tom.mason@wildlife.ca.gov](mailto:tom.mason@wildlife.ca.gov)) took place during several virtual meetings in 2022/23.

## E. PROJECT DESCRIPTION

Describe the proposal and any other relevant details, including:

**1. A description of the experimental design and research plan, including specific procedures for data collection, storage, processing, and analysis; and a timeline for implementing the project, including, if applicable, when compensation fishing is expected to occur.**

Through fishing for brown box crab and California king crab, we aim to collect and share information about these species and fishery and test alternative gear types in a limited-testing approach.

**Fishery/Biology:** We seek to fish for brown box crab and California king crab and gather essential fishery information for these species. The experimental design would involve using SBRS gear with traps to fish for box and king crab to sell while collecting data and samples and supporting the continuation of an existing tag-recapture study. We would begin fishing and providing the following information/samples to CDFW as soon as possible after a permit is granted:

- **Logbooks:** Logs will be completed for each day of box/king crab fishing to document fishing effort, gear configurations, depths, and catch.
- **Sample Trap forms:** Detailed information about the composition, quantities, sexes, reproductive status, and sizes/weights of target species and bycatch will be collected as requested by CDFW, following protocols already developed in the current experimental fishery or adapting as needed.
- **Tag-recapture study:** A tag-recapture study is underway to measure the growth, movement, and abundance of box crab. Detailed information about tagged crab will be recorded when recaptured, including size, sex, shell condition, and reproductive status. Department staff are encouraged to join fishing trips to continue tagging crab.
- **Electronic monitoring:** Electronic monitoring systems will be used as requested by CDFW to provide information on fishing behavior and crab habitat.
- **Biological sampling:** Samples of box and king crab will be provided to CDFW or researchers

as requested to further understanding of the biology and ecology of these species. Samples will be kept alive in fish holds and delivered at the dock.

Fishery- and biology-related data will be provided to CDFW in a timely manner after each fishing trip. CDFW Marine Region staff will be responsible for processing, storing, and analyzing these data. We will use a phased approach to testing subsea buoy retrieval system gear, detailed below.

### **Phase 1 – Dockside/Inshore configuration trials and testing**

During Phase 1, Kim Sawicki will conduct a series of trial fishing trips to perfect gear configurations with manufacturers. During these activities, the gear will be tended 100% of the time, and may require the use of a “tag” line or “safety” line to ensure gear configurations are easy to retrieve should a component of the configuration fail. This is the only time when a “tag” line is envisioned to be needed. These trial configurations are based on feedback solicited directly from past participants in the Box Crab EFP as well as experienced pot fishers in California. A week-long workshop just prior to this application was instrumental in determining needs and potential use in this deep-water fishery.

Once configurations are tested and reach 100% reliability for both release and line management, operational training workshop(s) will be held for recruited potential future Authorized Agents, Secondary Operators, crew, and Department-selected CDFW Law Enforcement personnel. After these workshop(s), fishers and enforcement staff will have the ability to demonstrate core competency with all equipment taught during the workshop(s). Further, they will be able to provide a general overview and understanding of all devices being trialed by other Authorized Agents. They will be trained in the protocols involved in the EFP, as well as data collection requirements. The workshop incorporates both dockside training, as well as inshore on-vessel training in depths of less than 35 fathoms. Authorized Agents must demonstrate the ability to deploy, retrieve, and reset the gear and conduct these activities independently before moving to Phase 2. Additional workshops will be scheduled if Department-selected CDFW Law Enforcement personnel deem it necessary.

### **Phase 2 – Finalize Individual Gear Configurations**

SST staff and gear manufacturers will work with recruited and approved Authorized Agents to optimize their selected retrieval devices and preferred line management strategies for the Authorized Agent’s individual fishing strategy. Once these configurations have shown a 100% gear retrieval rate (combined scoring of line management and release type) consecutively ( $n \geq 10$ ), these configurations will be shared with CDFW and Law Enforcement staff and Agents will proceed to Phase 3.

### **Phase 3 –Fishing**

The applicant and any additional Authorized Agents will begin fishing with SBRS configurations which will be deployed on 100% of pot gear, in accordance with their fishing strategies. Electronic Monitoring will be used in addition to Gear Marking applications that accompany SBRS gear manufacturer’s devices to record the location and times of trap deployments and retrievals. During fishing activities, data will be collected on environmental conditions, location, and virtual marking performance as described above. The applicant and future Authorized Agents will

conduct at least 50 successful consecutive trials of each selected configuration. If at any time the minimum success rate of the devices is significantly below the standard for these devices (95%), testing will be halted, configurations will be adjusted and/or abandoned in favor of new configurations. Relevant data related to subsea buoy retrieval system gear testing will be processed, stored, and analyzed by Kim Sawicki.

**2. A list of target species expected to be harvested as samples or for compensation under the EFP, including anticipated amounts (weight or number) and proposed use (e.g., bait, sell, personal use, or other (e.g., research or tag and release)).**

Species Name	Weight or Number	Proposed Use
Brown box crab (minimum 5 ¾" carapace width)	36,000 lbs.	Retain and sell; tag and release; research
California king crab (minimum 5" carapace width)	36,000 lbs.	Retain and sell; tag and release; research

**3. A list of species expected to be taken incidental to fishing conducted under the EFP, including anticipated amounts (weight or number), proposed use (e.g., bait, sell, personal use, discard, or other (e.g., research or tag and release)), and a description of any measures that will be used to reduce incidental catch mortality. Add rows to the table below as needed.**

Species Name	Weight or Number	Proposed Use
Brown box crab	Up to 5,000	Tag and release
California king crab	Up to 5,000	Tag and release

Some sublegal-sized box and king crab may be tagged and released as listed above; all other incidental catch will be immediately returned to the water. Based on the available data from the current box crab EFP, most of the catch will be comprised of box and king crab; bycatch of other invertebrates and finfish has been relatively low relative to target catch. Information about the amount and composition of non-target species caught in box crab traps can be found in the DFW Report: *Update on the Box Crab Experimental Fishing Permit Program* prepared for the March 24, 2022 MRC meeting ([link](#)). These primarily include urchin, rock crab, other non-cancer crabs, and lingcod. However, the species identities and catch rates vary by region and method of sampling. Given that we are proposing to use the same types and number of traps with less participants, it is anticipated there will be similar or lower amounts of bycatch.

During the previous box crab EFP, fishers found that fishing over sand or at a rock-sand interface resulted in a higher ratio of catch of crab and lower catch of fish compared to reef habitat. Therefore, these soft-bottom habitats will be targeted. In addition, it was determined that cutting a hole of least 4 inches wide in traps allowed more sublegal-sized crab to escape, which both reduces bycatch and increases fishing efficiency; these openings will be made in traps under this

EFP. While no incidentally caught species will be retained or sold, samples may be provided to CDFW as requested, including sub-legal sized box and king crab, for research purposes.

- 4. A description of the mechanisms that will be utilized to ensure that any proposed harvest limit for target and incidentally caught species are not exceeded and are accurately tracked or monitored (e.g., at sea fisheries observers, electronic monitoring, or other reporting method); and, if applicable, a description of the vessel's capacity to accommodate an onboard observer.**

CDFW Marine Region staff will monitor landings by permit-holders(s) and alert them when quotas for target catch are approached. Past participants in the box crab EFP had professional observers as well as video-based electronic monitoring document relatively minimal incidental catch in this experimental fishery, relative to target catch. Applicant and future Authorized Agents will provide vessels equipped to accommodate an onboard observer (i.e., current Coast Guard certifications and sufficient deck space) and to host observers (at CDFW's expense) on additional fishing trips, if requested by CDFW, particularly if new areas or habitats are explored where such data are not yet available.

- 5. A description of any potential impacts on existing fisheries, habitats, or possible incidental interactions with threatened, endangered, or protected species (e.g., sea turtles, marine mammals, and birds) that could occur as a result of the project.**

This fixed-gear fishing activity does pose a risk for whale entanglement, including ESA-listed species that frequent southern California. However, we are proposing measures to reduce the risk of entanglement in gear from this experimental fishery. Using subsea surface buoy gear on all trawls will significantly limit the number of lines, as well as the amount of time those lines are extended in the water column; acoustic-release systems will allow hauling of gear as soon as buoys surface, and time-release systems will be serviced as soon as possible after their scheduled time of release. "Trawling up" will reduce the number of lines currently allowed in the water, 75 per vessel, to 37 or less per vessel. All lines will be marked as requested by the Department to help inform a future line-marking program in California and help identify this fishery in the event of an entanglement. As approaches to line marking evolve; this applicant is willing to test various line and surface gear marking techniques as requested by the Department. Traps can pose a risk to benthic habitat, but the applicant has experience fishing pot gear in soft sediments adjacent to reefs; this has been determined by past box crab EFP participants as the best habitat in which to catch box and king crab. Furthermore, this type of bottom helps reduce bycatch and situations which may create excessive gear loss. Hence, anticipated effects from the traps contacting hard bottom areas are expected to be minimal. We will also use a series of techniques and devices for retrieval of any lost or malfunctioning gear. To date, these methods have resulted in a very high ratio of devices returned to the surface for inspection and determination of failure points. Box and king crab habitats are relatively deep compared to most other trap fisheries in southern California at typical depths of 400 – 800 feet. The potential for conflicts with other fisheries is low at these depths; other crabs and lobster are targeted at shallower depths, while spot prawn tends to be fished deeper.

- 6. The type and amount of gear to be used, including gear specifications and design, and, if applicable, a description of any measures and/or devices that will be used to reduce**

**bycatch.** If the project involves gear modifications or other gear innovations, the description must include how CDFW staff can locate, retrieve, and inspect the proposed gear.

**Trawls:** Traps that meet the specifications of rock crab traps will be used to target box and king crab in trawls of two traps or more.

**Line and Buoys:** All trawls will utilize a minimum of one subsea buoy retrieval system (described below) so the line and buoys will be submerged until they are released.

**Line and Buoy Marking:** All lines and buoys will be marked according to CDFW request, indicating the fishery and fisher by their license number.

Subsea Buoy Retrieval Systems are innovative gear types which store buoys and their retrieval devices at depth, existing in the water column only when fishers are present. These systems allow the vertical line (rope) and buoy, to be stored at the ocean floor alongside the trap or removed entirely and replaced by an inflatable air bag/buoy. To retrieve this gear, the fisher sets a timer on the device before setting and/or sends an acoustic signal to the device to release the rope and the buoy to the surface when the fisher is ready to service the gear. Storing all fishing gear on the ocean floor greatly reduces the time that a line is in the water column and thus the risk of interaction by vessels or animals. Management strategies utilizing these technologies require utilizing a system accessible by enforcement agencies to replace the function of traditional marker buoys at the sea surface. This requirement led to the creation of a virtual multi-manufacturer (interoperable) gear marking portal, the Ropeless Manufacturer's Work Group HUB (**rmwHUB™**) which supports cooperative data-sharing efforts between companies so regional regulatory and enforcement bodies can determine their specific needs and preferences for data access and reporting. The rmwHub enables this to happen without creating duplicative and costly programming changes between manufacturer's applications and allows fishers to locate equipment quickly and avoid activities that may cause unintended gear loss.

The applicant plans to combine and test a variety of **releases** (Table 1) and **line management methods** (Table 2) to identify the best configurations for the box crab fishery. Additionally, applicant will utilize, test, and report on the ability of **SBRS Adjuncts and Methods for Retrieval of Potential Lost Gear** (Table 3) to ensure low or no gear loss during these trials. Lastly, applicant will use **Electronic Monitoring/Gear Marking** (Table 4) to avoid overlayment of other fishing gear and to provide an adequate interface for LED staff to perform their routine activities.

**Table 1. SBRS Release Products**

<b>Manufacturer Name</b>	<b>Release Models</b>	<b>Release Type (GTR/Timer/Acoustic)</b>	<b>% Reliability*</b>
Desert Star Systems	<a href="#">ARC1-XD</a>	<a href="#">Ranging Acoustic</a>	97.8%*
Fiomarine	<a href="#">AC200 and F-Series Buoy</a>	Acoustic with Timer back-up	99.84%*
Ropeless Systems	<a href="#">Ropeless RISER™</a>	<a href="#">Acoustic with Timer back up air bag</a>	98.73%*
Subsea Sonics	<a href="#">DAR4RT</a>	<a href="#">Acoustic</a>	99.6%*

*\*Per Sustainable Seas Technology, INC trials 2020-2023 (n>200)*

**Table 2. Line Management Methods**

Manufacturer Name	Line Management Method
Desert Star Systems	<a href="#">Rosskelly Mesh Bag</a>
Fiomarine	<a href="#">Incorporated spool buoy</a>
Guardian Ropeless Systems	<a href="#">Guardian Trawl-Groundline Sled</a>
Ropeless Systems	<a href="#">Inflatable air bag</a>

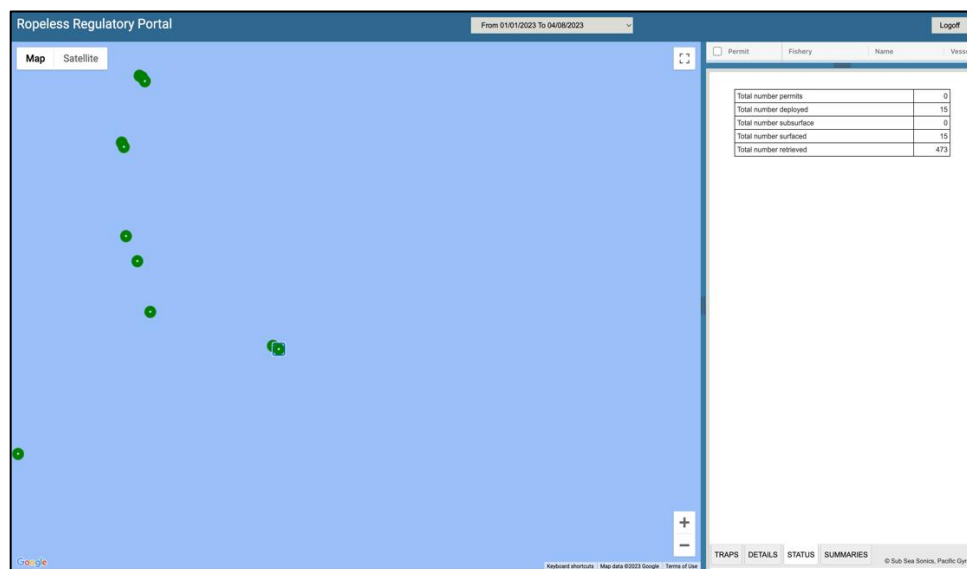
**Table 3. SBRS Adjuncts and Methods for Retrieval of Potential Lost Gear**

Manufacturer Name	SBRS Adjunct ( <i>type</i> )
Blue Ocean Gear	<a href="#">Smart Buoy GPS tracking buoy</a>
Grappling	<a href="#">Manual backup recovery system</a>
Guardian Ropeless Systems	<a href="#">Galvanic Timed Release</a>

**Table 4. Electronic Monitoring /Gear Marking**

Manufacturer Name	EM/Gear Marking	Type of Monitoring
Pelagic Systems	<a href="#">GPS Data Solar Logger</a>	Recorded, uploaded once within cell range, 1 min ping
Spot Trace	<a href="#">Spot X GPS tracker</a>	Real-time, 2.5 to 5 min ping
Subsea Sonics	<a href="#">Regulator Dashboard</a>	Online Dashboard (Figure 1)
SSS Gear Vault	<a href="#">Gear Vault</a>	Online Dashboard (Figure 2)
rmwHub™	<a href="#">rmwHUB Marine Mammal Commission</a>	Interoperable Virtual Gear Marking Tool

The dashboard platforms that LED and CDFW Marine Region will be able to access integrate information collected in manufacturer's individual gear-marking applications which are then submitted to [the rmwHub interoperable virtual gear marking system](#) will allow only authorized CDFW staff to see where SBRS gear is deployed and when it's scheduled to surface.

**Figure 1. Subsea Sonics Regulator Dashboard**

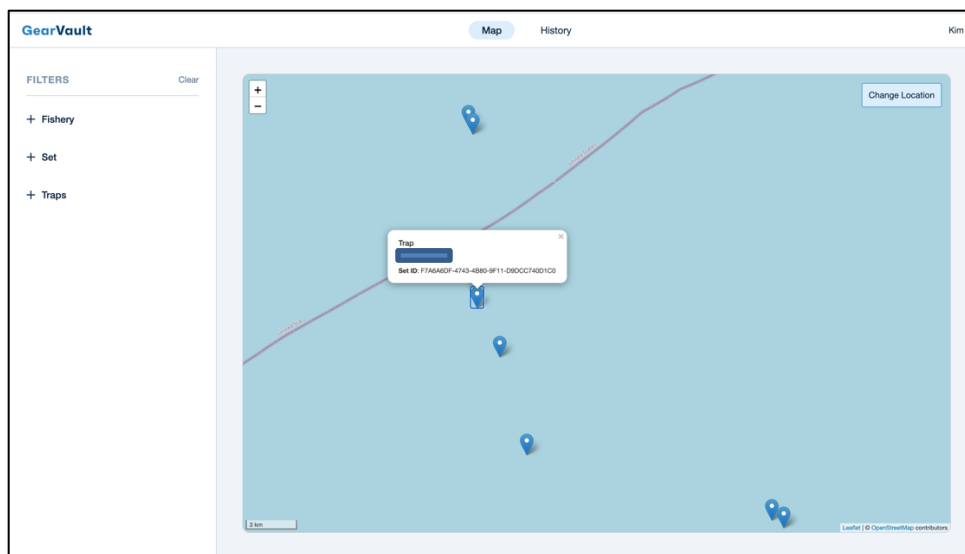


Figure 2. Sustainable Seas Technology, Gear Vault Dashboard

7. **The location and timing of the project.** The description must include trip specifications, such as fishing depth, anticipated number of trips, expected trip duration, and estimated number of hauls and average soak time (for fixed gear) or estimated number of tows/sets to be made per day, and estimated duration and speed per tow (for mobile gear). For project vessels listed in Section F of this document, the description must also identify any fishing activity that is expected to occur on the same trip as the project for purposes other than those provided by the EFP (e.g., fishing before and/or after the EFP activities).

The area proposed for box and king crab training and fishing are any state and federal waters south of Lopez Point (36°00' N) to the US-Mexico border between 10 and 150 fathoms in depth, except for any Marine Protected Areas and Essential Fish Habitat closures for bottom contact gear. The duration of fishing trips will be one to three days. Fishing will take place throughout the year. A maximum of 75 traps will be set in strings of two or more, resulting in up to 37 hauls per fishing trip. Traps will soak for a maximum of 96 hours unless weather or other safety reasons cause a delay. To minimize time and fuel costs and emissions, we request authorization to fish other permits held by the applicant(s) including rock crab, spot prawn, lobster, and groundfish during fishing trips for box and king crab.

## F. PROJECT VESSELS (IF APPLICABLE)

Provide vessel information. Using the table below, complete a separate entry for each project vessel to be authorized by the EFP. For any vessel that will be used in commercial fishing activity related to the permit, the commercial boat registration number issued pursuant to FGC Section 7881 is required. For any vessel that will not be used in commercial fishing activity related to the permit, the commercial boat registration number issued pursuant to FGC Section 7881 or a copy of the United States Coast Guard (USCG) Certificate of Documentation is required. If there is no Certificate of Documentation for the vessel, a copy of the vessel's state registration is required.

Vessel Name	F/V Fourth Watch
Boat Registration Number or Documentation	[Vessel ID omitted]
Owner Name	Gregory Olsen
Owner Address	[Address omitted]
Owner Telephone Number	[Phone number omitted]
Operator Name	Gregory Olsen
Operator Address	[Address omitted]
Operator Telephone Number	[Phone number omitted]
Vessel Name	F/V Island Lady G
Boat Registration Number or Documentation	[Vessel ID omitted]
Owner Name	Dannial Major
Owner Address	[Address omitted]
Owner Telephone Number	[Phone number omitted]
Operator Name	Dannial Major
Operator Address	[Address omitted]
Operator Telephone Number	[Phone number omitted]

#### G. SIGNATURE



04/07/2023

Signature of Applicant

Date

#### H. APPLICATION FEE PAYMENT



# Memorandum

**Date:** April 26, 2023

**To:** Melissa Miller-Henson  
Executive Director  
California Fish and Game Commission

**From:** Charlton H. Bonham  
Director

**Subject:** Transmittal of California Department of Fish and Wildlife Recommendation on Experimental Fishing Permit Application for Pop-Up Systems Testing in the Proposed Experimental Fishery for Box and King Crab (Kim Sawicki/Sustainable Seas Technology)

On February 3, 2023, the California Department of Fish and Wildlife (Department) accepted an experimental fishing permit (EFP) application from Kim Sawicki of Sustainable Seas Technology for technical review pursuant to subsection 91(d)(1)(B), Title 14, California Code of Regulations (CCR). Subsection 91(d)(2), Title 14, CCR requires the Department to develop and transmit a recommendation to the California Fish and Game Commission (Commission), including any permit special conditions, within 60 days from the date of application acceptance unless a time extension is needed pursuant to subsection 91(d)(3), Title 14, CCR. On April 4, 2023, the Department notified both the Commission and the applicant that a 30-day time extension was required to evaluate additional information requested by the Department for purposes of developing proposed special conditions for the EFP.

## Proposed EFP Project

During technical review, the original application was amended as described in the public notice of the Department's recommendation. The amended application requests a Tier 4 EFP to build on a previous EFP project for an experimental fishery for brown box crab. Approved by the Commission in December 2018, the box crab experimental fishery (established in Section 90, Title 14, CCR) expired on April 1, 2023. The proposed project would test the effects and efficacy of using pop-up fishing systems (also known as "ropeless," "lineless," and "on-demand" fishing systems) and continue the experimental fishery targeting brown box crab and California king crab while continuing to collect biological and fishery data to help fill critical information gaps for these species.

The pop-up fishing systems proposed for testing include four acoustic on-demand release and line management products: Desert Star Systems, Fiomarine, Ropeless Systems, and Subsea Sonics/Guardian Ropeless Systems. These systems are designed to store lines and buoys at depth on a trap until they are released, minimizing the amount of time a vertical line is suspended in the water. Testing of the pop-up fishing systems would follow a three-phase approach. Any authorized agent

(pursuant to subsection 91(b), Title 14, CCR) must first demonstrate core competency with all equipment, devices, and data collection protocols and work with Sustainable Seas Technology staff and gear manufactures to finalize individual gear configurations at sea using an attached backup line and a surface marker buoy while the gear is actively tended (Phases 1 and 2) before exploratory fishing with pop-up gear systems can begin (Phase 3). Pop-up systems would be used on 100% of the gear deployed while fishing for brown box crab and California king crab. Electronic monitoring of vessel locations would be used in addition to the electronic reporting of the locations and times of trap deployments and retrievals.

The proposed project would occur off the coast of California between Point Conception and the California/Mexico border in water depths ranging from 60 to 150 fathoms, excluding any Marine Protected Areas and Essential Fish Habitat closures for bottom contact gear. Experimental fishing would take place year-round for up to four years. The proposed project would include between 2 to 10 authorized agents and five authorized vessels. An annual fishing quota of 36,000 pounds of brown box crab and 36,000 pounds of California king crab is proposed per vessel. A maximum of 75 traps would be set in strings of up to seven traps, per vessel. Traps would soak for a maximum of 96 hours, unless weather or other safety reasons cause a delay. Data will be collected on fishing effort and catch using forms provided by the Department, and observers may be required at the request of the Department if fishing is occurring in areas where bycatch data is limited.

### **Department Review and Recommendation**

The Department carefully considered the information provided on the amended EFP application, and determined that the proposed project must be exempt from the following statute and regulations:

- Fish and Game Code Section 9005 (requires marking traps with a surface buoy);
- Subsection 125(b)(3), Title 14, CCR (prohibits pop-up buoy systems on board a vessel while rock crab fishing);
- Subsection 126(b)(1), Title 14, CCR (25-pound catch limit for brown box crab and California king crab).

In completing its technical review, the Department recommends the Commission approve a Tier 4 EFP for purposes of conservation engineering, data collection, and exploratory fishing with the proposed special conditions. If approved, the proposed special conditions together with the standard terms will ensure the protection of marine resources and allow the Department to adequately enforce the EFP. The proposed special conditions of the EFP (specified on form DFW 1103) are attached for the Commission's consideration, which include the following (specific changes to the proposed project and their associated justifications are marked with an asterisk\* and are in ***bold italics***):

- General requirements for valid commercial licenses, permits, and vessel registration.
- Maximum number of authorized agents that may participate in the proposed project.
  - ***\* for management and conservation purposes, a maximum of five vessels may be listed to match the capacity of first EFP***
- Authorized Species, Take Allowances, and Landing Requirements
- Gear Allowances, Specifications and Marking Requirements
  - ***\* for identification of EFP gear and enforcement purposes, every buoy shall be marked exclusively with the Identification Letters “EB” with at least one buoy marked with the operator's commercial fishing license identification number followed by the Identification Letters “EB”***
  - ***\* for identification of EFP gear and enforcement purposes, all buoy lines deployed with pop-up gear shall have pink marking 12 inches from the buoy end and the trap end, and in the center of the line***
  - ***\* for enforcement purposes, a maximum of seven traps per string of authorized gear is allowed***
- Pop-up Gear Testing Requirements
  - ***\* for management and enforcement purposes, the Department shall be notified when Phase 3 begins for each permittee and provide descriptions of the pop-up gear configurations and the gear marking applications being used***
- Allowable Fishing Area and Time of Year
  - ***\* for management and enforcement purposes, no traps or gear shall be used shallower than 60 fathoms or north of Point Conception (34° 27' N. latitude)***
- Vessel monitoring and tracking requirements.
  - ***\* for research and enforcement purposes, no testing or fishing for crab may take place under the EFP unless a functioning electronic monitoring system that is capable of recording the vessel's geographic location at a frequency of at least once per minute is installed and used***
- Observer requirements
  - ***\*for research purposes, authorized vessel operators may be responsible for contracting with a professional observer company, contrary to the request made in the amended application that the Department bear the cost***
- ***\*Best practices for avoiding whale entanglement for conservation and management purposes***
- ***\*Data collection and sharing requirements for research, management, and enforcement purposes***

- ***\*Reporting requirements for gear malfunctions, lost gear, and recovery efforts for research and management purposes***
- Other requirements necessary for research purposes and the protection and conservation of marine resources and the environment in accordance with applicable laws and regulations

The Department recommends approval of a permit fee reduction pursuant to subsection 91(m)(3), Title 14, CCR. If approved, this would provide information on innovative fishing gear and techniques to reduce interactions with protected species and test methods for identifying fixed-gear fisheries in the event of an entanglement. Furthermore, it would allow the collection of important biological and fishery data to help fill critical information gaps for brown box crab and California king crab.

### **Next Steps**

Pursuant to subsection 91(f), Title 14, CCR, the Department requests the Commission provide public notice of receipt of the recommendation and schedule the application and proposed permit special conditions for consideration no sooner than 30 days after public notice is given.

If you have any questions on this item, please contact Dr. Craig Shuman, Marine Regional Manager, at (916) 215-9694 or by email at [R7RegionalMgr@wildlife.ca.gov](mailto:R7RegionalMgr@wildlife.ca.gov).

Attachments: EFP application (confidential information omitted)  
Standard terms and proposed special conditions (DFW 1103)  
Public notice of Department recommendation  
CEQA Overview Memo and Draft Notice of Exemption

ec: Chad Dibble, Deputy Director  
Wildlife and Fisheries Division

Craig Shuman, D. Env.  
Regional Manager  
Marine Region

Eric Kord, Assistant Chief  
Law Enforcement Division

Garrett Wheeler, Attorney  
Office of General Counsel

Joanna Grebel  
Environmental Program Manager  
Marine Region

Melissa Miller-Henson, Executive Director  
Fish and Game Commission  
April 26, 2023  
Page 5

Tom Mason  
Senior Environmental Scientist Supervisor  
Marine Region

Lindsay Orsini, Environmental Scientist  
Marine Region

Marina Som, Acting EFP Coordinator  
Marine Region



**MARINE FISHERIES: EXPERIMENTAL FISHING PERMIT TERMS AND CONDITIONS**

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**Experimental Fishing Permit No.**

**Revision Date:**

**MARINE FISHERIES: EXPERIMENTAL FISHING PERMIT TERMS AND CONDITIONS**

Pursuant to California Fish and Game Code (FGC) Section 1022 and Section 91, Title 14, California Code of Regulations (CCR), the Experimental Fishing Permit (EFP) holder is authorized to conduct experimental fishing activities according to the requirements of the EFP approved by the Fish and Game Commission (Commission) and issued by the California Department of Fish and Wildlife (Department).

EFP Holder/Entity Administrator Name: **Kim Sawicki (EFP Holder)**

EFP Holder/Entity Administrator Address: **[Address omitted]**

Authorized Agent Name: **See authorized agent list on Page 3**

Authorized Agent Address: **See authorized agent list on Page 3**

Vessel Name and ID #: **See authorized vessel list on Page 3**

Description of authorized activity:

This permit authorizes testing and commercial use of pop-up gear fishing systems for take of brown box crab and California king crab pursuant to the standard terms and special conditions outlined below.

**STANDARD TERMS**

These standard terms shall apply to all persons or vessels conducting authorized activities under the EFP.

1. The permit shall be operated only on the vessels named on this form, if applicable. Either the EFP holder or the authorized agent must be aboard the vessel when activities are being conducted under this permit, and both are responsible and accountable for meeting the requirements and limits of this permit.
2. Pursuant to FGC Section 7857(d), the EFP holder or authorized agent shall have a valid copy of the Department issued EFP attached to a signed copy of this form in possession when activities are being conducted under this permit.



**MARINE FISHERIES: EXPERIMENTAL FISHING PERMIT TERMS AND CONDITIONS**

3. All persons conducting activities under an EFP must comply with all appropriate state and federal fishing laws and regulations, including but not limited to those relating to protected species, minimum size limits, and seasons or areas closed to fishing that are not otherwise exempted by the permit (see special conditions).
4. The EFP holder and authorized agent shall cooperate with the Department by allowing personnel designated by the Department to board the fishing vessel on any fishing trip (if applicable) or enter a place of business operated by the EFP holder or authorized agent under this permit, to retrieve, observe, or inspect any logbook, records, data, equipment, procedures, or catch throughout the duration of the permit.
5. The EFP holder or authorized agent shall provide Department staff with a 24-hour notice prior to every fishing trip. The contact information for Department staff will be provided for this purpose at the time of permit issuance.

**SPECIAL CONDITIONS**

As set forth in subsection 91(i), Title 14, CCR, special conditions may be placed on this permit for research purposes and the conservation and management of marine resources and the environment (see following page).

As set forth in subsection 91(k), Title 14, CCR, special conditions may be amended or repealed as necessary for research purposes and the conservation and management of marine resources and the environment.

**RECEIPT AND ACKNOWLEDGEMENT**

The permit is not valid until the EFP holder has certified by their signature below that they have: 1) read and understand the standard terms and special conditions of the permit; 2) unless otherwise specified in special conditions, paid the appropriate fees specified in Section 704, Title 14, CCR; and 3) returned a signed copy of this form to the Department.

I have read, understand and agree to abide by all standard terms and special conditions of this permit.

\_\_\_\_\_  
EFP Holder Signature

\_\_\_\_\_  
Date

Received by License and Revenue Branch (LRB)

Fee \$ \_\_\_\_\_

Experimental Fishing Permit No. \_\_\_\_\_

Revision Date \_\_\_\_\_

\_\_\_\_\_  
By: LRB

\_\_\_\_\_  
Date



**Experimental Fishing Permit No.**

**Revision Date:**

## **Authorization and Special Conditions**

List of approved special conditions, names and addresses of any additional authorized agents, and/or names and identification number of any additional authorized vessels.

### Authorized Agents and Vessels

1. This EFP is valid only for the authorized agents and vessels named below. The Department may allow up to a maximum of 10 authorized agents and 5 vessels for this EFP, as it deems necessary for research purposes.
  - a. Authorized Agent Name and Address
    1. Gregory Olsen [address omitted]
    2. Dannial Major [address omitted]
  - b. Authorized Project Vessel
    1. Fourth Watch [vessel ID omitted]
    2. Island Lady G [vessel ID omitted]
2. All parties (as specified in 1, above) operating under the authority of this permit must be informed of and agree to abide by all standard terms and special conditions of this permit.

### General

1. The EFP Holder or authorized agent (“permittee”) and any person who assists the permittee shall possess a valid commercial fishing license issued pursuant to FGC Section 7850, prior to engaging in any commercial fishing operations authorized by this permit.
2. The permittee and any person who assists the permittee shall possess a valid general trap permit issued pursuant to FGC Section 9001, prior to engaging in any fishing operations authorized by this permit.
3. The permittee shall possess a valid commercial boat registration issued pursuant to FGC Section 7881, for the vessel named above and display the Department Boat Registration numbers in plain sight on each side of the vessel.
4. The EFP Holder shall be responsible for coordination, oversight, and reporting of all authorized activities as described in the EFP application.

### Authorized Species, Take Allowances, and Landing Requirements

5. Each authorized vessel may take of up to 36,000 lbs of brown box crab (*Lopholithodes foraminatus*) and up to 36,000 lbs of California king crab (*Paralithodes californienis*) annually.
  - a. Incidental landings of up to 25 pounds of brown box crab and California king crab are allowed in other fisheries pursuant to Section 126, Title 14, CCR, but will count towards the annual limit until the Department is notified that the limit has been reached.
  - b. If an authorized vessel is replaced on this permit by a permittee, all brown box crab or California king crab landed from the original vessel will count towards the annual limit.



**MARINE FISHERIES: EXPERIMENTAL FISHING PERMIT TERMS AND CONDITIONS**

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6. If the annual limit for brown box crab or California king crab is reached before the permit expires for any authorized vessel, all authorized fishing gear deployed under this EFP from said vessel must be removed from the water immediately, and the permittee must notify the Department in writing and all crab must be landed within 24 hours after returning to port. Afterward, up to 25 pounds per day of each species may be landed pursuant to Section 126, Title 14, CCR.
7. All species other than brown box crab and California king crab taken in authorized gear shall be returned to the water immediately and not used as bait.
8. All landing receipts reporting catch under the EFP must have the state EFP number recorded in the "State Permit #" field and the number of individual crabs recorded under the "# of Fish" field. Any landings of brown box crab or California king crab taken either under the EFP or incidentally in other fisheries shall record "SpeciesID" as follows:
  - a. Box crab (*Lopholithodes foraminatus*): species code 809
  - b. King crab (*Paralithodes* spp.): species code 804
9. Minimum size limits: Brown box crab must have a minimum width of 5 ¾ inches and all California king crab must have a minimum width of 5 inches, as measured across the widest part of the carapace including spines. No crab under the minimum size shall be retained, possessed, or landed, unless authorized in writing by the Department to retain smaller crab for research purposes.
10. No processing or packaging may take place until all crab is weighed, recorded on a landing receipt, and a landing receipt is provided to the authorized agent by the receiver.
11. Permittees may participate in the following fisheries during fishing trips in which EFP activities are taking place if appropriate permits for retained species are in place: rock crab, spot prawn, lobster, and groundfish. Adherence to all other regulations regarding the take of these species is required. Lobster and rock crab may not be possessed on the same trip pursuant to FGC Section 9011.
12. Samples shall be provided to the California Department of Public Health when requested for public health testing.

**Gear Allowances, Specifications and Marking Requirements**

13. Pursuant to FGC Section 9004, permittees must service their traps at intervals no more than 96 hours unless otherwise authorized in writing by the Department. Exceptions may be made for weather or other safety concerns.
14. All traps must comply with the requirements specified in FGC Section 9011 for rock crab, except the Department may allow and/or request deployment of specific trap designs for research purposes. All traps used or deployed must have at least one destruct device pursuant to FGC Section 9003.
15. Buoy markings shall comply with requirements specified in Section 180.5, Title 14, CCR. Every buoy shall be marked exclusively with the Identification Letter "EB" with at least one buoy marked with the operator's commercial fishing license identification number followed by the Identification Letter "EB".
  - a. Buoys that are 4 inches in diameter or greater shall have Identification Letters marked on four opposing sides.
  - b. Buoys that are smaller than 4 inches in diameter shall have Identification Letters marked on two opposing sides.



**MARINE FISHERIES: EXPERIMENTAL FISHING PERMIT TERMS AND CONDITIONS**

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- c. The commercial fishing license identification number shall be at least 1.5 inches in height and drawn with a line no less than 0.25 inch thick.
  - d. The Identification Letters “EB” shall be at least 3 inches in height and drawn with a line no less than 0.25 inch thick.
  - e. All Identification Numbers and Identification Letters on a buoy shall be clearly and distinctly marked, and in a color that contrasts with the buoy; the numbers and letters shall be applied and maintained so that they are visible and legible.
16. A maximum of 75 traps may be deployed or possessed on board a vessel. All gear must be fished in strings of no more than seven traps.
17. All authorized fishing gear must utilize pop-up gear at one end of a string. A vertical line may be used only prior to Phase 3 of the project while pop-up gear is being tested and actively tended.
18. Any buoy lines used with pop-up gear shall have pink marking 12 inches from the buoy end and the trap end, and in the center of the line.
19. Permittees will test and report on the efficacy and durability of line marking methods and surface gear marking when requested by the Department.
20. If requested by the Department, permittees must move fishing gear in response to circumstances including, but not limited to, marine life entanglement risk, gear conflicts, and public health.

Pop-up Gear Testing Requirements

21. The EFP Holder shall conduct workshop(s) to train the authorized agents (if applicable) in data collection and alternative gear operation protocols prior to at-sea trials of the pop-up gear fishing systems.
22. All traps using pop-up gear must be recorded in a gear-marking web-based application upon deployment and retrieval, and all associated data fields must be populated with accurate information (see Attachment A).
23. Permittees shall provide the Department access to the gear-marking web-based platforms identified in the EFP application for data sharing and enforcement purposes.
24. The EFP Holder must notify the Department when Phase 3 begins for each permittee and provide descriptions of the pop-up gear configurations and the gear marking applications being used.

Allowable Fishing Area and Time of Year

25. Fishing activities under this EFP shall only occur between Point Conception (34° 27' N. latitude) and the California/Mexico border (32° 32' N. latitude).
26. All authorized fishing gear must be set at depths between 60 – 150 fathoms.
27. Fishing activities shall not occur in any state Marine Protected Areas pursuant to Section 632, Title 14, CCR.
28. Fishing operations shall abide by all applicable Essential Fish Habitat closures for bottom contact gear as described in Federal Regulations (Title 50, Part 660, Subpart F).
29. Fishing shall be subject to delays or area closures due to marine life entanglement risk pursuant to Section 132.8, Title 14, CCR, or public health concerns pursuant to Fish and



**MARINE FISHERIES: EXPERIMENTAL FISHING PERMIT TERMS AND CONDITIONS**

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Game Code Section 5523.

Other Requirements

30. No fishing for brown box crab or California king crab may take place unless one or more functioning electronic monitoring systems are installed and used as specified by the Department. Required systems may include but are not limited to location positioning loggers with a ping rate of at least 1 per minute and electronic trap tags. The permittee shall grant the Department access to all data.
31. 24 hours prior to commencing a fishing trip during which EFP activity is expected to be conducted, notice of vessel name, anticipated fishing dates, port of departure, and expected landing port shall be made via email to the Department's Law Enforcement Division (LEDMarineNotifications@wildlife.ca.gov) and Marine Region ([email omitted] or [phone number omitted]).
32. Permittees shall follow the best practices for avoiding whale entanglement described in the attached guide. This includes fishing gear and incident reporting requirements.
33. Permittees shall employ the gear retrieval methods described in the EFP application to recover any lost gear. Permittees will further document all lost gear, including traps, buoys and other equipment and submit annually to the Department. Failure to keep or submit required information may result in revocation or suspension (including non-renewal) of the permit.
34. Authorized vessels may be required to carry a fisheries observer at the discretion of the Department and provide that observer with accommodations equivalent to those provided to the captain and crew for both single and multi-day trips if multi-day trips are conducted. The permittee may be required to contract with a qualified fisheries observer company.
35. Unless otherwise specified by the Department, the EFP Holder shall submit reports pursuant to subsection 91(l), Title 14, CCR to the EFP Coordinator ([EFP@wildlife.ca.gov](mailto:EFP@wildlife.ca.gov)) no later than 60 days after the permit expiration date. See Attachment A for reporting requirements.



## **Attachment A: Data Collection and Reporting Requirements**

### Pop-up Gear Testing

1. Deployment Data. For all strings of traps deployed during Phase 3, the following data shall be made available to the Department as soon as practical, but no more than 72 hours after deployment:
  - a. The pop-up gear system(s) used.
  - b. The number of traps in the string, and the latitude and longitude of the first and last traps in each string, given to the highest precision allowed by onboard instrumentation (“location”).
  - c. The name and vessel ID of the vessel the string was deployed from.
  - d. The experimental fishing permit number the string is deployed under.
  - e. The time and date of deployment.
  - f. The time and date the release mechanism is programmed to allow the marker buoy to surface, if applicable.
2. Recovery Data. For all strings of traps deployed during Phase 3, the following data shall be made available to the Department as soon as practical, but no more than 72 hours after recovery:
  - a. The time and date of recovery.
  - b. The location where the gear was recovered.
  - c. The distance between the location where the gear was deployed and recovered.
  - d. The time elapsed between the programmed release time and recovery, if applicable.
  - e. Documentation of any pop-up system malfunctions (e.g., early release or unresponsive to release signal).
  - f. The location of any unrecovered traps.
3. Permittees shall make available the location of the first and last traps in a string to other commercial fishers operating within 1/4 statute mile of deployed pop-up gear as soon as practical, but no more than 12 hours after deployment, for the purpose of avoiding gear conflict.

### Exploratory Fishing

1. Permittees shall participate in all fishery- and biological-research data collection activities required by the Department that may include but are not limited to:
  - a. Documenting all fishing activities using a logbook provided by the Department
  - b. Documenting trap contents using forms provided by the Department
  - c. Recording information on recaptured tagged crab using forms provided by the Department
  - d. Collecting biological samples
2. Permittees shall submit all required records of EFP fishing activity and catch to the Department’s Marine Region ([email omitted]) within 72 hours of each fishing trip. Failure to keep or submit required records of fishing activity and catch within 72 hours after each fishing trip may result in revocation or suspension (including non-renewal) of the permit.

### Reports

1. In addition to the requirements of subsection 91(l), Title 14, CCR, annual and final reports to be submitted by the EFP Holder shall include:



**MARINE FISHERIES: EXPERIMENTAL FISHING PERMIT TERMS AND CONDITIONS**

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- a. A short summary of fishing activity and findings.
- b. A record of all lost gear, including traps, buoys and other equipment.
- c. A summary of the efforts taken to recover lost gear, and the outcome of those efforts.
- d. Summaries of any trainings or workshops conducted for fishers or Law Enforcement personnel, including outcomes and accomplishments.
- e. A table or other database containing pop-up gear deployment and recovery data described above for each trip testing pop-up gear systems conducted under the authority of this permit, including all system malfunctions.
- f. The number of trips testing pop-up gear, the total number of deployments, and the number of unsuccessful recoveries.
- g. Descriptions of the pop-up gear systems and configuration(s) used and assessment of their performance, including any issues identified regarding their utility in deep-water fixed gear fisheries.
- h. Descriptions of virtual gear marking applications used and assessment of their performance.



# Sustainable Seas Technology EFP Application

*June 15, 2023*

*Presented to:*

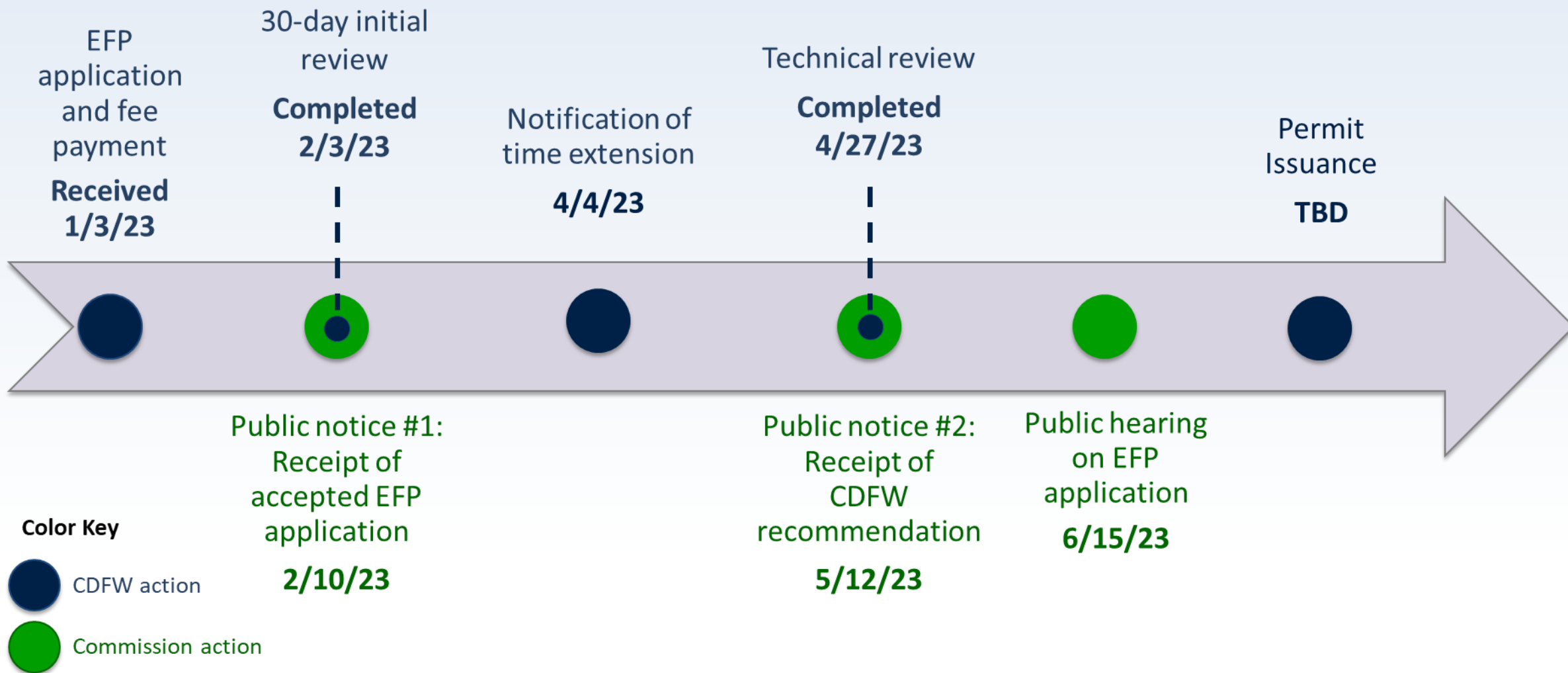
**California Fish and Game  
Commission**

*Presented by:*

**Lindsay Orsini, PhD  
Environmental Scientist  
Marine Region**



# EFP Application Review Timeline





# Background

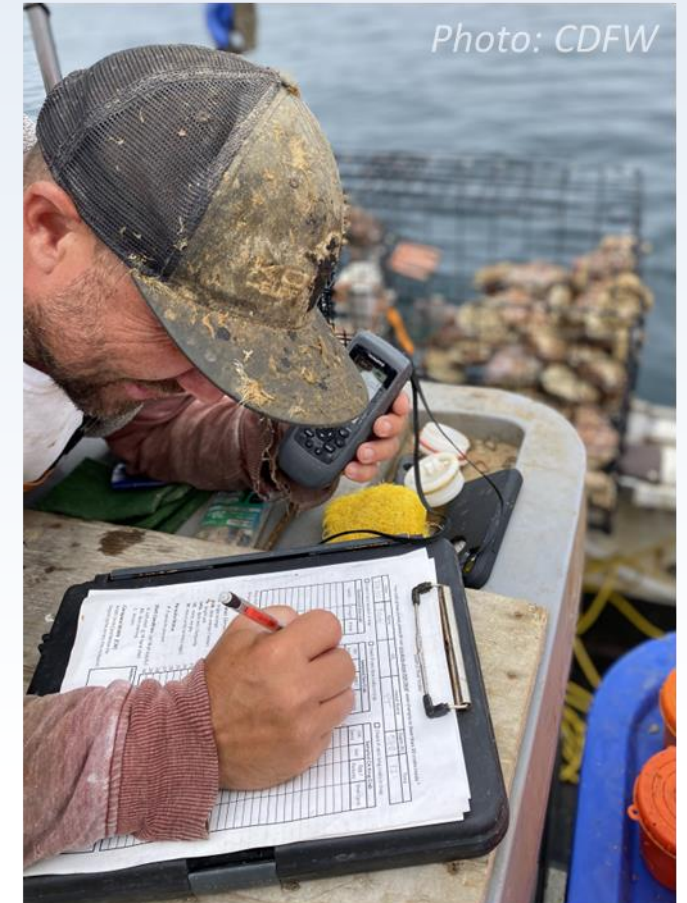
- Prior box crab EFP (CCR, Title 14 § 90)
- April 2019 – April 2023



*Trap containing brown box crab and California king crab*



*Measuring crab size (carapace width)*



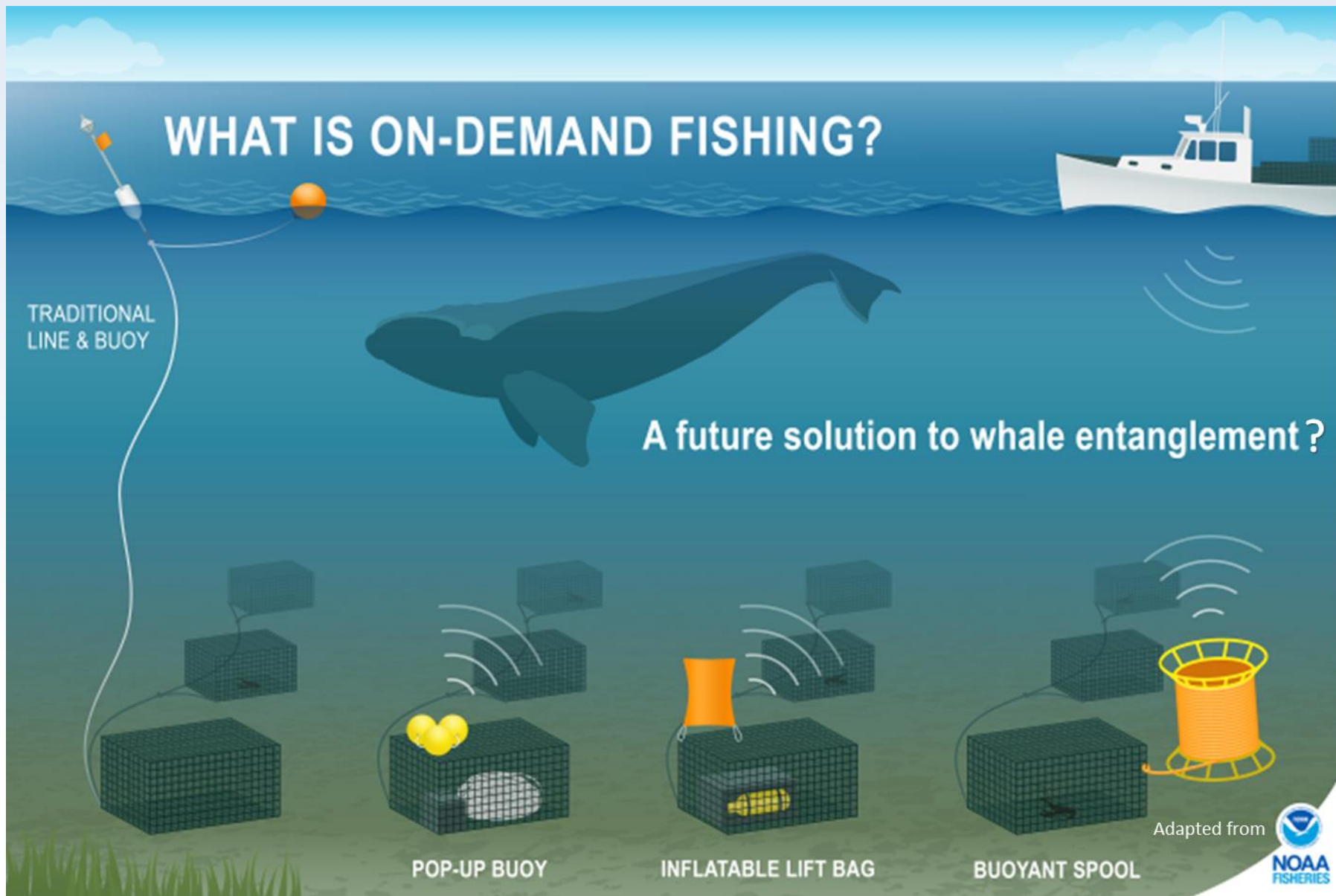
*EFP participant recording data*



# EFP Application

- EFP application requests:
  - Tier 4 permit with 50% fee reduction
  - Use of pop-up fishing systems (also known as “ropeless” and “on-demand” systems) to continue exploratory fishing of brown box crab and CA king crab
  - Annual limit of 36,000 lbs for each species per authorized vessel
  - Minimum size limits of 5  $\frac{3}{4}$  inches (box) and 5 inches (king) carapace width
  - Allow fishing year-round at depths between 10 – 150 fathoms in Central and Southern California
  - Deploy up to 75 traps per vessel in strings of two or more
  - Participation in other specified fisheries allowed on EFP trips: lobster, groundfish, rock crab, and spot prawn

# On-Demand Pop-Up Systems



# On-Demand Pop-Up Systems (Cont.)

- Trialing up to four on-demand pop-up systems

*Fiomarine*



*Desert Star*



*Subsea Sonics*

*Guardian Ropeless*





# Virtual Gear Marking

- Various options for gear marking applications
  - Operated from personal electronic devices (i.e., smart phone or tablet)
  - Dashboards accessible by Department staff with authorization
- Ropeless Manufacturer's Work Group HUB (rmwHUB™) interoperable virtual gear marking system
  - Integrates data from various apps into one portal



# On-Demand Pop-Up Systems Testing

- Phase 1:
  - Conduct a series of trial fishing trips to perfect gear configurations with manufacturers
  - Hold operational training workshop(s) for authorized agents and CDFW enforcement staff
- Phase 2:
  - Finalize individual gear configurations and demonstrate at least 10 consecutive successful deployments and retrievals
- Phase 3:
  - Exploratory fishing for brown box crab and CA king crab using pop-up fishing systems on 100% of gear



# Proposed Special Conditions

(Specific changes to the proposed EFP project are marked with an asterisk\* and are in ***bold italics***)

- General requirements for valid commercial licenses, permits, and vessel registration
- Authorized vessels (***\*up to 5***) and agents (up to 10) may participate in the proposed project
- ***\*Fishing area bounded by Point Conception, California/Mexico Border at depths of 60 – 150 fathoms***
- ***\*Gear allowances, specifications, and marking requirements, including:***
  - ***Maximum of 75 traps per vessel fished in strings of up to seven traps***
  - ***Buoy and line marking requirements to identify gear***
  - Traps must be serviced at intervals of no more than 96 hours



# Proposed Special Conditions (Cont. 1)

(Specific changes to the proposed EFP project are marked with an asterisk\* and are in ***bold italics***)

- ***\*Electronic monitoring requirement***
- ***\*May be required to carry a fisheries observer at the discretion of CDFW and participants will be financially responsible for coverage***
- ***\*Best practices for avoiding whale entanglement for conservation and management purposes***
- ***\*Data sharing requirements for research, management, and enforcement purposes***
- ***\*Reporting requirements for gear malfunctions, lost gear, and recovery efforts***



# Proposed Special Conditions (Cont. 2)

(Specific changes to the proposed EFP project are marked with an asterisk\* and are in ***bold italics***)

- Other requirements necessary for research purposes and the protection and conservation of marine resources and the environment
- All other applicable fishing laws and regulations apply



# Proposed Special Conditions, Amendments.

(Specific changes to the proposed EFP project are marked with an asterisk\* and are in ***bold italics***)

- Recommend removing item 18: “Any buoy lines used with pop-up gear shall have pink marking 12 inches from the buoy end and the trap end and in the center of the line.”
  - Justification: Item 19 is sufficient for the Department to request that lines be marked and provides the flexibility needed to test various marking schemes: Permittees will test and report on the efficacy and durability of line marking methods and surface gear marking when requested by the Department.”
- Recommend modifying item 13 as follows (additions noted in **underlined bold italics**):  
“Pursuant to FGC Section 9004, permittees must service their traps at intervals no more than 96 hours unless otherwise authorized in writing by the Department. Exceptions may be made for weather or other safety concerns. **Additionally, when using gear with timed-release devices, permittees must service their traps within two hours of the selected release interval.**”
  - Justification: Timed-release devices are proposed only to be used as a back-up to on-demand systems, but adding a service interval requirement will maintain consistency with special conditions for other, approved EFPs using timed-release pop-up gear.



# Recommendation

Approval of Tier 4 EFP with proposed special conditions

50% Fee Reduction

# Thank You

The logo of the California Department of Fish & Wildlife is a shield-shaped emblem. It features a yellow outline of the state of California in the center. Above the map, the word "CALIFORNIA" is written in large, bold, yellow capital letters. Below the map, the words "DEPARTMENT OF FISH & WILDLIFE" are written in smaller, yellow capital letters. The entire logo is set against a light blue background.

**Lindsay Orsini, Environmental Scientist**  
**Invertebrate Management Project**

Email: [EFP@wildlife.ca.gov](mailto:EFP@wildlife.ca.gov)



May 31, 2023

Eric Sklar, President  
California Fish and Game Commission  
P.O. Box 944209  
Sacramento, CA 94244-2090

**RE: Item 22, June 15, 2023, EFP Application 2023-01, Sustainable Seas Technology  
Experimental Fishing Permit Application for Subsea Buoy Retrieval Systems –  
*SUPPORT***

Dear President Sklar and Commission Members,

The undersigned groups are part of the Marine Innovation Gear Alliance (MIGA), which works in partnership with fishing communities to introduce pop-up gear in California. We are writing to request the Commission approve the Experimental Fishing Permit (EFP) application entitled, “Subsea Buoy Retrieval Systems Testing in the Box and King Crab Experimental Fishery” submitted by Kim Sawicki (Sustainable Seas Technology) as recommended by the California Department of Fish and Wildlife (CDFW). If the permit is approved, MIGA will help provide financial and logistical support for the proposed activities.

This EFP will build on a previous successful trial of subsea buoy retrieval systems (hereafter, “SBRs,” also known as “pop-up,” “ropeless,” or “on-demand” fishing systems) in California’s box and king crab fisheries. Testing results will inform CDFW’s potential authorization of alternative gear use and build confidence in SBRs as a potential strategy to mitigate entanglement risk and reduce gear loss in these particular fisheries. The proposed project also complements ongoing testing efforts in the California Dungeness crab fishery by expanding understanding of the utility of SBRs across a range of habitats, depths, sea conditions, and fishing practices. The participation of fishers proven to be collaborative partners in this, or other experimental fisheries, sets up the proposed project for success. The requirement of an initial 40-hour training certification to attain competency in a suite of acoustic and time-release SBR types demonstrates the dedication of project partners and high caliber of the project design.

The application is an excellent example of a conservation engineering EFP, fitting squarely within the purpose and goals of the Commission’s EFP program adopted last year. Allowing innovative SBRs to operate through an EFP is the pathway recommended by CDFW to enable authorization as alternative gear in state fisheries. If authorized, this new gear could enable the experimental—and potentially commercial—box crab and king crab fisheries in a manner that virtually eliminates the risk of whale and sea turtle entanglements. This would enhance the climate resilience of these fisheries by supporting stable economic activity across the entire fishing season irrespective of co-occurrence with these endangered species. The technology could reduce gear loss, lessening marine debris, saving costs to fishers, and improving the overall health of the marine ecosystem.

In summary, we believe this EFP will advance whale-safe fishing opportunities in California, benefiting marine wildlife populations, fishing communities, and seafood consumers. Sustainable Seas Technology and outside experts have thoughtfully constructed the application, and the terms and conditions have been carefully designed based on the recommendations of CDFW. Therefore, we urge you to approve the Sustainable Seas Technology EFP at this meeting.

Sincerely,

Francine Kershaw, Ph.D.  
Senior Scientist, Oceans Division  
Natural Resources Defense Council

Dan Silver, M.D.  
Chief Executive Officer  
Endangered Habitats League

Kurt Lieber  
President and Founder  
Ocean Defenders Alliance